REMARKS

This Preliminary Amendment is submitted (1) to eliminate multiply dependent claims from the above-identified application, (2) to amend the specification and claims in accordance with amendments made under PCT Article 19 on March 13, 2001, and (3) to correct some additional minor specification errors.

Claims 3 to 24 are pending herein. Claims 1 and 2 have been canceled without prejudice or disclaimer.

Prompt and favorable examination of this application on the merits is respectfully solicited.

Respectfully submitted,

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Please file a preliminary amendment to correct the following errors in the originally filed application.

Page 39 l.3	600: sponge	→	600, 620: sponge
Page 43 l.11	sponge 600	→	sponge 620
Page 47 l.16	FIGURE 14(2)	→	FIGUURE 14(1)

The corresponding pages are attached herewith.

55: cathode (plate)

60: (substrate's) stage

600: sponge

61: electrode plate

62: chemical solution (sponge)

69: frame-like container

70: anodic oxidation layer (of scan line)

71: chipped pattern portion (of scan line)

80: box-like container

81: chemical solution (pure water) supply port

82: chemical solution (pure water) recovery port

EMBODIMENT OF THE INVENTION

The invention will be hereinafter described according to its embodiments.

(First Embodiment)

A first embodiment of the invention will be described with particular reference to FIGURE 11. In FIGURE 11, parts and elements corresponding to those of the prior art explained earlier are indicated with the same reference numerals as in the prior art and there is omitted an explanation on them. This is equally applied to other figures and embodiments.

An active substrate 2 is conveyed from the outside of an in-substrate selective electric chemical treatment system or from a substrate storage container within the treatment system by a

hole on the electrode plate 61 and then removed. Thereafter, the (reversed polarity) electrode plate 61 is moved away from the active substrate 2 while the active substrate being separated from the stage. After the remaining chemical solution is further washed away with pure water or the like, the active substrate is taken out of the chemical treatment system.

(Second Embodiment)

A second embodiment is designed such that a sponge impregnated with a chemical solution is adhered to the inner surface of the electrode plate.

In this embodiment, as shown in FIGURE 12, a sponge ~~600~~ 620 impregnated with a chemical solution is adhered to the inner surface of the electrode plate 61 opposed to the active substrate 2. The chemical solution is confined in a specified region by pressing the electrode plate 61 against the active substrate 2. After completion of the pin hole inspection, the electrode plate 61 is moved away from the active substrate 2 and the chemical solution adhered to the active substrate 2 is recovered and removed. Then, the active substrate 2 is separated from the stage, and taken out of the chemical treatment system after the chemical solution is further removed. It is apparent that the material of the sponge and the material of the member for adhering or fixing the sponge to the electrode plate 61 must be selected taking chemical resistance into account in relation to the chemical characteristics of the chemical solution.

In the second embodiment, the use of the sponge allows the

acid 0.1 N is supplied to the box-like container 80 through a chemical solution supply port 81 while being recovered from a chemical solution discharge port 82, thereby carrying out a circulative supply. Note that the electrode plate 61 is fixedly placed within the box-like container 69. A minus potential is applied from a direct current power source to the terminal (not shown) and a plus potential is applied from the direct current power source to the electrode plate 61, whereby an electric chemical treatment is done. After completion of the electric chemical treatment, discharge of the electrolytic solution, washing-away of the electrolytic solution with pure water, and drying of the inside of the box-like container 80 as well as the substrate by spraying drying gas are carried out. Then, the box-like container 80 is separated from the substrate 2 and subsequently, the substrate 2 is separated from the stage 60 to be taken out of the electric chemical treatment system.

(1)

As shown in FIGURE 14~~(2)~~, a piping system for circulating the electrolytic solution 62 is formed as a closed circuit by connecting a supply pipe 83, the box-like container 80 and an electrolytic solution recovery pipe 82, the supply pipe 83 having an electrolytic solution supply tank 85 and an electrolytic solution supply pump 86. Reference numeral 87 represents a filter for removing particles and impurities contained in the electrolytic solution, whereas reference numeral 88 represents a temperature controlling system such as a cooler for controlling the temperature of the circulating electrolytic solution 62. In addition, pure water supplied from a pure water

What is claimed is:

1. (Canceled)

2. (Canceled)

3. An in-substrate selective electric chemical treatment system comprising:

holding means for holding an insulating substrate;

an electrode connected, in the periphery of the insulating substrate, to a conductive pattern formed on the insulating substrate held by the holding means;

chemical solution confining means for confining a chemical solution in only a specified region on the insulating substrate, the specified region being smaller than the insulating substrate or slightly larger than an image displaying section on an active substrate formed on the insulating substrate;

a reversed polarity electrode plate for applying an electric charge to the chemical solution, the electric charge having polarity opposite to that of the conductive pattern; and

chemical solution supplying and discharging means for supplying and discharging the chemical solution to and from the